NOAA Fleet Update

FOR JULY 2013

The following update provides the status of the ships and aircraft in NOAA's fleet, including current location and planned mission(s). NOAA's ships and aircraft play a critical role in the collection of oceanographic, atmospheric, hydrographic, and fisheries data. NOAA's fleet of research aircraft and ships are operated, managed, and maintained by NOAA's Office of Marine and Aviation Operations (OMAO), which includes both civilians and the commissioned officers of the NOAA Commissioned Officer Corps (NOAA Corps), one of the seven Uniformed Services of the United States. Please click on the Table of Contents entry to be taken directly to a specific ship or aircraft. The fleet is listed based on the geographical location of their homeport/base starting in the Northeast and ending in the Pacific.

Find us on Facebook for the latest news and activities.

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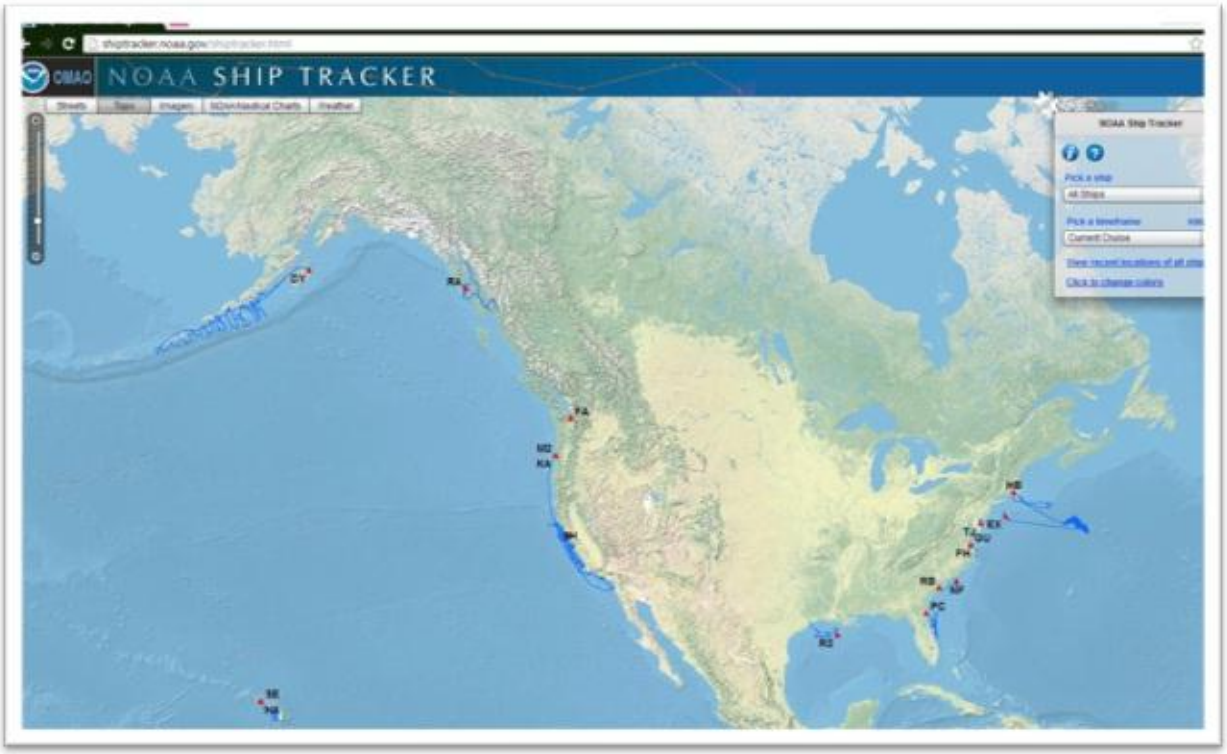
NOAA Ship *Gordon Gunter* at Sunset docked in Pascagoula, MS
June 2013 - Photo Credit: NOAA teacher at sea program participant Sue Cullumber

NOAA’s Ships

NOAA's Ship Tracker (screen shot below) shows information about the location, present and past, of NOAA's ships.
http://shiptracker.noaa.gov



Ferdinand R. Hassler

Homeport and Commander: New Castle, NH – LCDR Ben Evans
Primary Mission Category: Hydrographic Surveys
Ship Status: Underway July 17 – August 1, 2013
DEPART: Norfolk, VA **ARRIVE:** Norfolk, VA

Project: Hydrographic Survey Operations in the Approaches to Chesapeake Bay, VA

Objectives: To support safe navigation through the acquisition and processing of hydrographic survey data for updating nautical charts and by the identification and dissemination of dangers to navigation as identified during the course of survey operations.

Henry B. Bigelow

Homeport and Commander: Woods Hole, MA (currently docked in Newport, RI) – CDR Kurt Zegowitz
Primary Mission Category: Fisheries Research
Ship Status: Underway July 1 – 23, 2013 & July 29 – August 19, 2013
DEPART: Newport, RI **ARRIVE:** Newport, RI
DEPART: Newport, RI **ARRIVE:** Newport, RI

Project: Atlantic Marine Assessment Program for Protected Species (AMAPPS) – Cetacean and Turtle Abundance Survey

Objectives: The objectives of both parts are to:

1) Determine the distribution and abundance of cetaceans, sea turtles and sea birds within the study area.
2) Collect vocalizations of cetaceans using passive acoustic arrays.
3) Determine the distribution and relative abundance of plankton using bongo nets with Conductivity, Temperature and Depth gauges (CTDs), the Multiple Opening/Closing Net and Environmental Sensing System (MOCNESS), visual plankton recorder and EK-60 single beam echo sounder.
4) Collect hydrographic and meteorological data.
5) When possible, collect biopsy samples and photo-identification pictures of cetaceans.

Okeanos Explorer

Homeport and Commander: North Kingstown, RI – CDR Ricardo Ramos
Primary Mission Category: Oceanographic Exploration and Research
Ship Status: Underway July 8 – 25, 2013 & July 31 – August 17, 2013
DEPART: North Kingstown, RI **ARRIVE:** New York, NY
DEPART: New York, NY **ARRIVE:** North Kingstown, RI

Project: Northeast U.S. Canyons Explorations

Objectives: Both of these cruises will involve mapping the sea floor with an EM302 multibeam sonar and an EK60 single beam sonar, as well as ocean exploration with a remotely operated vehicle (ROV). Both cruises will be shown in real time through live feeds on the oceanexplorer.noaa.gov website via telepresence capabilities. The first cruise will conduct operations focused on the western portion of the Northeast U.S. Canyons, while the second cruise will conduct operations focused on the eastern portion of the Northeast U.S. Canyons. The daily schedule for both cruises will usually be split between daytime ROV operations (>500m) and evening/night Conductivity, Temperature and Depth (CTD) rosette and mapping operations.

Thomas Jefferson

Homeport and Commander: Norfolk, VA – CDR Lawrence Krepp
Primary Mission Category: Hydrographic Surveys
Ship Status: Alongside Marine Operations Center, Atlantic in Norfolk, VA for regularly scheduled maintenance and repairs.
ANTICIPATED DEPARTURE: August 12, 2013

Nancy Foster

Homeport and Commander: Charleston, SC – LCDR Nick Chroback
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Underway July 14 – 23, 2013
DEPART: Charleston, SC **ARRIVE:** Charleston, SC

Project: EPA Region 3 Dam Neck Ocean Disposal Site, Coastal Eutrophication, and Ocean Acidification Study Cruise

Objectives: These objectives are listed in order of importance

1) Continue the monitoring of the biennial survey of the Dam Neck Ocean Disposal Site, used for the disposal of dredged material. The survey is part of a requirement for use of the site under the Site Management and Monitoring Plan required under the Water Resources Development Act.
2) Region 3 continues to collect water quality samples along the Mid-Atlantic Bight. Over 20 years' worth of data have been collected and will be utilized to determine whether any long term statistically significant changes in nutrient concentrations can be noted. This data is being prepared as part of a Region 3 State of the Oceans report and will be available to the public once the report goes through the peer review process.
3) The ocean plays an important role in regulating the amount of carbon dioxide in the atmosphere. As atmospheric concentrations increase, the ability for the ocean to absorb more carbon dioxide decreases. Surface, mid-thermocline, and bottom samples will be collected along three identified transects. The objective is to collect baseline data for pH in the Mid-Atlantic Bight.

Ronald H. Brown

Homeport and Commander: Charleston, SC – CAPT Mark Pickett
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Underway July 17 – 27, 2013
DEPART: Charleston, SC **ARRIVE:** Reykjavik, Iceland

Project: Global Ocean Ship-based Hydrographic Investigations Program (GO-SHIP) Repeat hydrography cruise A16 North

Objectives: The GO-SHIP Repeat Hydrography Program provides a robust observational framework to monitor long-term trends of physical chemical and biological parameters in the ocean. The goal of the effort is to occupy a set of hydrographic transects with full water column measurements over the global ocean to study physical and hydrographic changes over time. These measurements are in support of:

1) Model calibration and validation
2) Carbon system studies
3) Heat and freshwater storage and flux studies
4) Deep and shallow water mass and ventilation studies
5) Calibration of autonomous sensors

Gordon Gunter

Homeport and Commander: Pascagoula, MS – LCDR Jeff Taylor / CDR Hancock
Primary Mission Category: Fisheries Research
Ship Status: Underway June 29 – July 9, 2013 & July 13 – August 1, 2013
DEPART: Norfolk, VA **ARRIVE:** Norfolk, VA
DEPART: Norfolk, VA **ARRIVE:** Norfolk, VA
First Project: NOAA-Living Marine Resources Cooperative Science Center (NOAA/LMRCSC) Scientific and Educational Cruise

Objectives: The purpose of this cruise is to provide at sea experience to scientific personnel, graduate and undergraduate students of the NOAA-Living Marine Resources Cooperative Science Center (NOAA/LMRCSC). Three to four deepwater stations will be occupied at each of eight locations, at depths ranging from 300 to 800 m on the continental slope following a brief sonar survey to assess trawlability. One CTD cast, Yankee trawl, and sediment grab will be conducted at each station. Two studies will be conducted during the course of this cruise on the mid-Atlantic shelf and slope from Hudson Canyon to South Carolina: monkfish study and deep sea red crab study.

Second Project: Atlantic Marine Mammal Assessment Survey

Objectives:
Conduct visual line-transect surveys to estimate the abundance and spatial distribution of cetaceans in U.S. Atlantic waters.

1) Conduct passive acoustic surveys simultaneous with visual surveys to provide supplemental information on cetacean abundance and spatial distribution.
2) Collect tissue samples (biopsies) of select cetaceans from the bow of the *Gordon Gunter*.
3) Collect data on distribution and abundance of sea turtles, seabirds, and other marine life.
4) Collect oceanographic and environmental data including scientific echosounders (EK60) and acoustic Doppler current profiler (ADCP) data to quantify acoustic backscatter due to small fish and zooplankton.
5) Collect vertical profiles of hydrographic parameters (e.g., temperature, salinity, oxygen concentration) using CTD and XBTs.

Oregon II

Homeport and Commander: Pascagoula, MS – Master Dave Nelson
Primary Mission Category: Fisheries Research
Ship Status: June 23 – July 7, 2013 & July 10 – 19, 2013 & July 26 – August 8, 2013
DEPART: Galveston, TX **ARRIVE:** Pascagoula, MS
DEPART: Pascagoula, MS **ARRIVE:** Pascagoula, MS
DEPART: Pascagoula, MS **ARRIVE:** Mayport, FL

First & Second Project: Southeast Area Monitoring and Assessment Programs (SEAMAP) Summer Groundfish Survey

Objectives: Sample the northern Gulf with Southeast Area Monitoring and Assessment Program (SEAMAP) standard trawl sampling gear to determine the abundance and distribution of benthic fauna. Transmit information weekly, via email, for real time reports of catch rates of penaeid species. Collect size measurements to determine population size structures. Record profiles through the water column of

temperature, salinity, fluorescence, dissolved oxygen, and turbidity using a Conductivity/Temperature/Depth (CTD) unit at SEAMAP stations. Transmit data every 3 days to the NOAA National Coastal Data Development Center at Stennis Space Center, Mississippi and other researchers to map the hypoxic zone. Collect water samples daily and perform dissolved oxygen tests using benchtop Winkler titrations and an Orion 3 Star Portable D.O. meter. Assess the occurrence, abundance and geographical distribution of the early life stages of ichthyoplankton using a bongo frame fitted with a 0.335 mm net and a neuston frame fitted with a 0.950 mm net at selected SEAMAP stations.

Third Project: 2013 Shark / Red Snapper Bottom Longline Survey

Objectives:

1) Sample the U.S. Atlantic and northern Gulf of Mexico for data concerning the distribution and abundance of shark and red snapper populations in order to aid in stock assessments.
2) Collect morphological measurements and biological samples to facilitate life history studies.
3) Provide tagging opportunities for coastal teleosts and sharks.
4) Conduct CTD casts to profile water column temperature, salinity, conductivity, transmissivity, dissolved oxygen concentrations and fluorometry.

Pisces

Homeport and Commander: Pascagoula, MS – CDR Peter Fischel
Primary Mission Category: Fisheries Research
Ship Status: Underway July 1 – 14, 2013 & July 17 – August 1, 2013
DEPART: Mayport, FL **ARRIVE:** Mayport, FL
DEPART: Mayport, FL **ARRIVE:** Mayport, FL

First Project: South Atlantic Bight Marine Protected Areas (MPAs)

Objectives: The goal of the cruise is to gather additional data on habitat and fish assemblages in five of the South Atlantic MPAs as part of a long term sampling program to document changes in these areas before and after fishing restrictions are implemented.

1) Daytime Operation: Conduct ROV transect surveys of habitat and fish assemblages during daylight hours.
2) Daytime Operation: Conduct total water column Conductivity, Temperature, Depth (CTD) profiles.
3) Night Operation: Conduct multibeam mapping to find areas to dive on with the ROV the following day.
4) Education and Outreach: We will have a Teacher-at-Sea participating on this cruise as well as a videographer that will be producing a cruise video and providing materials for Harbor Branch Oceanographic Institute's website.

Second Project: South East Fishery Independent Survey (SEFIS)

Objectives: Conduct applied fishery-independent sampling research focusing on:

1) The assessment of spatial variability in distribution and abundance of species within the snapper-grouper complex;
2) Comparative analysis of fish traps, video cameras, and acoustics, and
3) Bathymetric data collection (for subsequent habitat mapping) over hard bottom habitats.

NOAA Ship *Bell M. Shimada* underway
June 2013 - Photo: NOAA

Bell M. Shimada

Homeport and Commander: Newport, OR – CDR Scott Sirois
Primary Mission Category: Fisheries Research
Ship Status: Underway July 1 – 19, 2013 & July 23 – August 10, 2013
DEPART: San Francisco, CA **ARRIVE:** Newport, OR
DEPART: Newport, OR **ARRIVE:** Port Angeles, WA
Project: 2013 Joint U.S.-Canada Integrated Acoustic and Trawl Survey of Pacific Hake and Pacific Sardine (SaKe 2013)

Objectives: The primary goal of the survey is to estimate the biomasses, distributions, and biological compositions of Pacific hake and Pacific sardine populations using data from an integrated acoustic and trawl survey off the west coast of the U.S. and Canada from approximately San Diego, California (Latitude 32°48.0174'N) to the north end of Vancouver Island, Canada (Latitude 50°45.65'N).

McArthur II

Homeport: Newport, OR
Ship Status: The ship is currently docked in Newport, OR, in layup status.

Rainier

Homeport and Commander: Newport, OR – CDR Rick Brennan
Primary Mission Category: Hydrographic Surveys
Ship Status: Underway June 15 – July 3, 2013 & July 8 – 25, 2013 / July 29 – August 15, 2013
DEPART: Juneau, AK **ARRIVE:** Kodiak, AK
DEPART: Kodiak, AK **ARRIVE:** Kodiak, AK
DEPART: Kodiak, AK **ARRIVE:** Kodiak, AK

First Project: Hydrographic Survey Operations in Chatham Strait, AK

Second and Third Project: Hydrographic Survey Operations around South Alaska Peninsula and Shumagin Islands, AK

Objectives: To support safe navigation through the acquisition and processing of hydrographic survey data for updating nautical charts and by the identification and dissemination of dangers to navigation as identified during the course of survey operations.

Fairweather

Homeport and Commander: Ketchikan, AK – CDR James Crocker
Primary Mission Category: Hydrographic Surveys
Ship Status: Underway July 11 – 14, 2013 & July 22 – 25, 2013
DEPART: Seattle, WA **ARRIVE:** Newport, OR
DEPART: Newport, OR **ARRIVE:** Seattle, WA

Project: Sea trials, ship shakedown, and transit

Objectives: Conduct sea trials to test the integrity and stability of the ship after Dry Dock repairs and conduct ship shakedowns to test all the ship systems.

Oscar Dyson

Homeport and Commander: Kodiak, AK – CDR Mark Boland
Primary Mission Category: Fisheries Research
Ship Status: Underway June 30 – July 18, 2013 & July 22 – August 9, 2013
DEPART: Kodiak, AK **ARRIVE:** Kodiak, AK
DEPART: Kodiak, AK **ARRIVE:** Kodiak, AK

Project: Gulf of Alaska Summer Pollock Survey

Objectives:

1) Collect acoustic trawl (AT) data necessary to determine the distribution, biomass, and biological composition of walleye Pollock and other midwater fishes.
2) Collect target strength data using hull-mounted or lowered transducers for use in scaling acoustic data to estimates of absolute abundance.
3) Calibrate the ER60 acoustic systems using standard sphere calibration techniques.
4) Conduct trawl hauls to ground truth multi-frequency acoustic data classification of fish and other organisms.

5) Deploy a sterio-camera system (Cam-Trawl) in the midwater trawl to optically sample fish.
6) Deploy a drop-camera system to identify echosign in situations where trawls cannot occur.
7) Collect physical oceanographic data (temperature, salinity, and oxygen profiles) at selected sites, and continuously collect sea surface temperatures and salinity data.
8) Collect sea floor data at selected sites using the ME70 multi-beam echosounder.
9) Evaluate the use of an optically-triggered stereo camera system to sample fish and other organisms near the seafloor.

Hi'ialakai

Homeport and Commander: Honolulu, HI – CDR Mike Ellis
Primary Mission Category: Oceanographic Research, Environmental Assessment
Ship Status: Underway June 25 – July 2, 2013 & July 9 – 16, 2013
DEPART: Pearl Harbor, HI **ARRIVE:** Pearl Harbor, HI
DEPART: Pearl Harbor, HI **ARRIVE:** Pearl Harbor, HI

First Project: Site monitoring of U.S. Environmental Protection Agency (EPA) – designated ocean dredged material disposal sites in Hawaiian Islands (South Oahu and Hilo sites).

Objectives: The South Oahu and Hilo ocean dredged material disposal sites (ODMDS) were designated by EPA Region 9 and actively used beginning in the 1980s. The South Oahu site has received the highest volume of dredged material, generated from construction and maintenance dredging by the U.S. Navy in Pearl Harbor. The primary objective of site monitoring is to assess performance and site conditions relative to disposal operations, including: determination of the horizontal extent of the dredged material deposit footprint relative to site boundaries; no adverse impacts of disposal of dredged material (i.e., no impacts on benthic fauna); and confirmation of pre-disposal sediment testing (i.e., no adverse chemical contamination issues, relative to ambient conditions). Site monitoring activities are expected to include: multi-beam bathymetry, sediment profile imaging (SPI) with plan view camera, and sediment sampling (grain size, chemistry, and benthic community).

Second Project: Woods Hole Oceanographic Institute (WHOI) Hawaii Ocean Timeseries Station (WHOTS)

Objectives: Deploy the WHOTS-10 mooring. Simultaneously log data from the WHOTS-10 buoy, the WHOTS-9 buoy, project-supplied meteorological sensors, and *HA* shipboard instruments. This will occur during ~ 48 hours of inter-comparison period during which a sequence of Conductivity, Temperature, and Depth (CTD) casts will be made. Recover the WHOTS-9 mooring and obtain hydrographic data with CTD casts and Acoustic Doppler Current Profiler (ADCP) profiles, at or near the center of Station ALOHA.

Oscar Elton Sette

Homeport and Commander: Honolulu, HI – LCDR Stephanie Koes
Primary Mission Category: Fisheries Research
Ship Status: Underway July 3 – 21, 2013
DEPART: Pearl Harbor, HI **ARRIVE:** Pearl Harbor, HI

Project: Monk Seal Camp Deployment and Coral Reef Ecosystem Division (CRED) dive operations

Objectives:

1) Monk seal camp deployment, resupply, and/or surveys at all sites in the Northwestern Hawaiian Island chain.
2) Office of National Marine Sanctuary survey of French Frigate Shoals, Laysan Island, Lisianski Island, and Pearl and Hermes Reef.
3) Research and monitoring efforts at Kure Atoll and opportunistically at Pearl and Hermes Reef, Lisianski Island, Laysan Island, and French Frigate Shoals by CRED dive teams.
4) Recovery of deep water Ecological Acoustic Recorders (EAR)s as time allows at French Frigate Shoals, Lisianksi Island, Pearl and Hermes Reef, and Kure Atoll.

Ka'imimoana

Homeport: Honolulu, HI
Ship Status: The ship is currently in a layup status in Newport, OR.

NOAA's Aircraft

WP-3D (N43RF) taking off from MacDill Air Force Base
June 2013 - Photo Credit: SrA Shandresha Mitchell, MacDill AFB Public Affairs

WP-3D (N43RF)

Home Base:	OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander:	TBD
Current Mission:	2013 Hurricane Reconnaissance and Research – Western Atlantic and Gulf of Mexico, June 1 – November 30, 2013

Radar reconnaissance missions on NOAA WP-3D aircraft will be conducted to support tropical cyclone forecasting and the Hurricane Forecast Improvement Project. These flights will use the WP-3D's tail Doppler radar system to obtain high-density, three-dimensional measurements of the inner core wind structure of each tropical cyclone, potentially throughout its full life cycle. The hurricane research missions will also use the WP-3D to support the calibration/validation of satellite measurements and instrumentation development for the tropical cyclone environment and sampling of other aspects of the tropical cyclone inner core. These measurements will be used to enhance the accuracy of track and intensity guidance generated by NOAA's numerical weather prediction models. They will also be used directly by NWS hurricane specialists with the ultimate outcome being improved accuracy of intensity and track forecasts, extended forecast/warning lead-times and improved confidence levels by decision makers.

WP-3D (N42RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander: CDR Mark Sweeney
Current Mission: Southeastern Nexus (SENEX) Project, Southeastern U.S., June 1 - July 15, 2013

This is a joint use of the NOAA WP-3D aircraft by the Climate Research & Modeling Program and Air Quality Program. This intensive measurement period in the Southeast U.S. region will support the objectives of both Programs while maximizing the use of the aircraft and minimizing the costs to NOAA. The climate change study will focus on the sources and processes that are responsible for the formation and transformation of climate forcing agents, including ozone and aerosols, in the atmosphere and their influence on the earth's balance. The Air Quality component of the regional study is leveraged by the multi-agency Secondary Ozone and Aerosol Study (SOAS) and will build on the Southern Oxidants Study conducted by NOAA and partners in this region in the 1990s. The aircraft will be used to diagnose the factors responsible for emissions of ozone and aerosol precursors and their formation mechanisms.

Twin Otter (N46RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Current Mission: None

The aircraft will be undergoing scheduled maintenance and then utilized for flight training and proficiency flights.

Twin Otter (N48RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: Sault St. Marie, Ontario
Current Mission: None

Aircraft undergoing scheduled corrosion inspection.

Twin Otter (N56RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Temporary Base: Southeastern/South Central/Southwestern Alaska
Aircraft Commander: LTJG Robert Mitchell
Current Mission: Steller Sea Lion Survey, June 16 – July 10, 2013

The National Marine Fisheries Service / National Marine Mammal Laboratory will conduct aerial surveys of endangered and threatened Steller sea lions to estimate abundance of pups, juveniles and adults on land during the summer breeding season. Steller sea lions are listed under the Endangered Species Act and the information obtained during these surveys is critical for monitoring recovery of the species and for management of commercial fisheries in federal waters of the North Pacific Ocean. Three cameras will be installed in a specialized motion-compensating mount that is controlled by a computer. Photos will be taken of the Sea Lion rookeries and then later analyzed to get accurate counts of the animals.

Twin Otter (N57RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Aircraft Commander: LT Francisco Fuenmayor / CDR Jeff Hagan
Current Mission: Gulf of Maine and New England waters. North Atlantic Right Whale Surveys – until July 31, 2013

This survey will serve multiple objectives with respect to marine mammal conservation including providing locations of right whales to mariners; providing description of right whale distribution to support the implementation of seasonal and dynamic area management; providing annual photo-identification records on right whales, as well as detailed vertical photogrammetry in selected periods; providing information on the distribution and abundance of marine mammals and marine turtles in the winter, spring, summer and fall seasons; providing sightings of dead Whales; providing information on the distribution of shipping and fishing gear, and census seal populations along the New England coast.

Jet Prop Commander (N45RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Base (winter months): Eden Prairie, MN
Aircraft Commander: LT Paul Hemmick
Current Mission: Snow Survey/Water Resources Line Installation – Upper Midwest. Surveys will last until the end of July, 2013

Aircraft will conduct Line Installation flights to establish new Snow Water Equivalent and Soil Moisture survey areas. Aircraft will undergo scheduled maintenance early in July and then resume the survey line installation work.

Gulfstream IV (N49RF)

Home Base: OMAO's Aircraft Operations Center (AOC), MacDill AFB, Tampa, FL
Current Location: Savannah, GA
Current Mission: None

Aircraft is being outfitted for Hurricane Surveillance operations once complete. Approximate date of completion: early July.

King Air (N68RF)

Home Base: Manassas, VA
Aircraft Commander: LCDR Jon Neuhaus
Current Mission: Richmond, VA, and other locations. Coastal Mapping. Continuous operations.

During the first week of July, the King Air will be in scheduled maintenance in West Virginia for an engine analysis. This should take approximately 10 days. Upon completion, the King Air will resume supporting Coastal Mapping mission ops (Locations TBD).

Unmanned Systems Support

3-2-1 launch! NOAA Corps officer LTJG Nicholas Morgan sends a PUMA unmanned aircraft aloft over Olympic Coast National Marine Sanctuary.
Photo Credit: Matt Pickett

U.S. Coast Guard – Puma

In early July, the PUMA system will be loaded onto the U.S. Coast Guard Icebreaker *HEALY* where it will remain until NOAA commences joint emergency response exercises in the arctic from September 7-22, 2013.

NASA Global Hawk

NASA Global Hawk UAS - Dryden Flight Faciliy, Edwards AFB, CA. Flight Tests.
Crew: LCDR Jon Neuhaus/CAPT Phil Hall
NOAA Corps Pilots will supplement NASA pilots on Global Hawk flights planned during the month. Two instruments are being evaluated on the NASA Global Hawk aircraft (NASA 871); the UAV Synthetic Aperture Radar (UAVSAR) and Hawkeye, a cloud physics probe that is wing mounted. Test flights will be conducted within the Edwards Air Force Base restricted air space. After the check-out flights are completed, the science team has requested to conduct an operational flight to Canada for the UAVSAR system.

Teacher At Sea Program

The mission of the National Oceanic and Atmospheric Administration's (NOAA) Teacher at Sea (TAS) program is to give teachers a clearer insight into our ocean planet, a greater understanding of maritime work and studies, and to increase their level of environmental literacy by fostering an interdisciplinary research experience. The program provides a unique environment for learning and teaching by sending kindergarten through college-level teachers to sea aboard NOAA research and survey ships to work under the tutelage of scientists and crew. Then, armed with new understanding and experience, teachers bring this knowledge back to their classrooms. Since its inception in 1990, the program has enabled more than 600 teachers to gain first-hand experience of science and life at sea. By participating in this program, teachers enrich their classroom curricula with knowledge that can only be gained by living and working side-by-side, day and night, with those who contribute to the world's body of oceanic and atmospheric scientific knowledge. The following NOAA Ships will have Teachers At Sea onboard in the month of **July** and you may find their blogs and other information at http://teacheratsea.noaa.gov/2013/index.html.

NOAA Ship *Thomas Jefferson*
Name: Ms. Yaara Crane
School: Fairfax County Public Schools – Annandale High School, Annandale, VA
Subjects: Science – General Chemistry, IB Chemistry
Cruise: Hydrographic Survey

NOAA Ship *Oregon II*
Name: Ms. Sarah Boehm
School: Community Day Charter Public School, Lawrence, MA
Subjects: Science
Cruise: SEAMAP Summer Groundfish Survey

NOAA Ship *Pisces*
Name: Ms. Jennifer Petro
School: Everitt Middel School, Panama City, FL
Subjects: All sciences
Cruise: South Atlantic Marine Protection Area (MPA)

NOAA Ship *Rainier*
Name: Ms. Rosalind Echols
School: Science Leadership Academy, Philadelphia, PA
Subjects: Science- physics
Cruise: Hydrographic Survey

Name: Mr. Avery Marvin
School: Taft 7-12, Depoe, OR
Subjects: Sciences
Cruise: Hydrographic Survey

Name: Mr. Robert Ulmer
School: Lake Butler Middle School, Lake Butler, FL
Subjects: Science – Physical, Biological, and Earth Sciences
Cruise: Hydrographic Survey

Name: Ms. Katie Sard
School: Isaac Newton Magnet School, Newport, OR
Subjects: Science
Cruise: Hydrographic Survey

NOAA Ship *Oregon II*
Name: Ms. Christina Peters
School: Farmland Elementary School, Rockville, MD
Subjects: All subjects
Cruise: SEAMAP Summer Groundfish Survey

Name: Ms. Julie Karre
School: Armistead Gardens Elementary and Middle School, Baltimore,MD
Subjects: English and Language Arts
Cruise: Shark / Red Snapper Bottom Long Line

Name: Ms. Sarah Boehm
School: Community Day Charter Public School, Lawrence, MA
Subjects: Science
Cruise: SEAMAP Summer Groundfish Survey

NOAA Ship *Pisces*
Name: Mr. Paul Ritter
School: Pontiac High School, Pontiac, IL
Subjects: Biology and Earth Sciences
Cruise: South East Fishery Independent Survey

NOAA Ship *Oscar Dyson*
Name: Ms. Amie Ell
School: John Paul Stevens High School, San Antonio, TX
Subjects: Earth Science and Space Science
Cruise: Alaska Pollock Survey

Name: Ms. Julia Harvey
School: Eugene SD 4J, Eugene, OR
Subjects: Biology and Environmental Science
Cruise: Alaska Pollock Survey

Name: Ms. Melissa George
School: Lafayette Tecumseh Junior High School, Lafayette, IN
Subjects: General Science, gifted and ELL
Cruise: Alaska Pollock Survey

On June 23, Sarah Boehm, a science teacher from Massachusetts, set sail on the NOAA Ship *Oregon II* to help scientists survey groundfish in the Gulf of Mexico! You can follow her blog here:
http://teacheratsea.noaa.gov/2013/boehm.html

About OMAO

NOAA's Office of Marine and Aviation Operations operates a wide variety of specialized aircraft and ships to complete NOAA's environmental and scientific missions. OMAO is also responsible for the administration and implementation of the NOAA Diving Program, Small Boat Program and Aviation Safety Program, to ensure safe and efficient operations in NOAA-sponsored underwater activities and aviation and small boat operations. The Director of OMAO and the NOAA Corps is Rear Admiral Michael S. Devany (two star). Rear Admiral (lower half or one star) David A. Score is the director of the Marine and Aviation Operations Centers. Captain Anne Lynch is the director of the NOAA Commissioned Personnel Center.

NOAA's Aircraft Operations Center (AOC), located at the MacDill Air Force Base in Tampa, Florida, is home to NOAA's fleet of aircraft. These fixed-wing aircraft operate in some of the world's most remote and demanding flight regimes--over open ocean, mountains, coastal wetlands, Arctic pack ice, and in and around hurricanes and other severe weather--with an exemplary safety record. There are no comparable aircraft in the commercial fleet to support NOAA's atmospheric and hurricane surveillance/research programs. AOC provides unique specialized platforms to NOAA's scientists. The hard-working versatile aircraft collect the environmental and geographic data essential to NOAA hurricane and other weather and atmospheric research; provide aerial support for coastal and aeronautical charting and remote sensing projects; conduct aerial surveys for hydrologic research to help predict flooding potential from snow melt, and provide support to NOAA's fishery research and marine mammal assessment programs.

NOAA's ship fleet provides hydrographic survey, oceanographic and atmospheric research, and fisheries research vessels to support NOAA's strategic plan elements and mission. The vessels are located in various locations around the United States. The ships are managed by the Marine Operations Center, which has offices in Norfolk, Virginia and Newport, Oregon. Logistic support for these vessels is provided by the Marine Operations Center offices or, for vessels in Woods Hole, Massachusetts; Charleston, South Carolina; Pascagoula, Mississippi; San Diego, California; Kodiak and Ketchikan, Alaska; and Honolulu, Hawaii; by Port Captains located in those ports.

NOAA's aircraft and ship fleet is operated and managed by a combination of NOAA Corps Officers, wage marine and civilian employees. NOAA Corps pilots are the only pilots in the world who are trained and qualified to fly into hurricanes at dangerously low altitudes (below 10,000 feet). Officers and OMAO civilians also frequently serve as chief scientists on program missions. The wage marine and civilian personnel include licensed engineers, mechanics, navigators, technicians, and members of the engine, steward, and deck departments. Administrative duties and navigation of the vessels are performed by the commissioned officers. The aircraft and ship's officers and crew provide mission support and assistance to embarked scientists from various NOAA laboratories as well as the academic community.

In addition to NOAA's research fleet, OMAO is fulfilling NOAA's ship and aircraft support needs with contracts for ship and aircraft time with other sources, such as the private sector and the university fleet.

The NOAA Commissioned Officer Corps

– Supporting NOAA's Science, Service, and Stewardship –

The NOAA Commissioned Officer Corps (NOAA Corps) is one of the seven uniformed services of the Unites States and serve with the 'special trust and confidence' of the President. NOAA Corps officers are an integral part of the National Oceanic and Atmospheric Administration (NOAA), an agency of the U.S. Department of Commerce. With 321 officers, the NOAA Corps serves throughout the agency's line and staff offices to support nearly all of NOAA's programs and missions. The combination of commissioned service and scientific expertise makes these officers uniquely capable of leading some of NOAA's most important initiatives.

The NOAA Corps is part of NOAA's Office of Marine and Aviation Operations and traces its roots back to the former U.S. Coast and Geodetic Survey, which dates back to 1807 and President Thomas Jefferson. In 1970, NOAA was created to develop a coordinated approach to oceanographic and atmospheric research and subsequent legislation converted the commissioned officer corps to the NOAA Corps.

The NOAA Corps today provides a cadre of professionals trained in engineering, earth sciences, oceanography, meteorology, fisheries science, and other related disciplines. Corps officers operate NOAA's ships, fly aircraft, manage research projects, conduct diving operations, and serve in staff positions throughout NOAA.

Benefits of the NOAA Corps to the Nation

The combination of commissioned service with scientific and operational expertise, allows the NOAA Corps to provide a unique and indispensable service to the nation. NOAA Corps officers enable NOAA to fulfill mission requirements, meet changing environmental concerns, take advantage of emerging technologies, and serve as environmental first responders. For example:

- In 2012 after Hurricane Sandy, seafloor sonar surveys completed by NOAA ships and small boats helped reopen Baltimore and Virginia ports, quickly restarting commerce and allowing Navy ships to return to port. New York and New Jersey ports were reopened, enabling emergency supplies to reach some of the hardest-hit areas. Maritime traffic resumed more quickly because NOAA embedded regional navigation managers within command centers.

- Hours after Sandy, NOAA planes and scientists conducted aerial surveys of the affected coastlines and immediately published the photos online, allowing emergency managers and residents to examine the damage even before ground inspections were permitted. These surveys are also vital to FEMA assessment teams and other on-the-ground responders and those managing oil spill clean-up and damage assessment. Over 3,000 miles of coastline have been surveyed, and over 10,000 images processed to document coastal damage and impacts to navigation.

- In 2011, OMAO's Aero Commander and Jetprop Commander aircraft conducted snow surveys, which increased the accuracy of National Weather Service's River Forecast Centers flood forecasting during a record year of snow and floods.

- After Hurricane Irene in 2011, the NOAA Ship *Ferdinand Hassler* and team completed 300 lineal nautical miles of survey work in less than 48 hours providing a Damage Assessment that enabled the U.S. Coast Guard to re-open ports and restore more than $5M per hour in maritime commerce less than 3 days after the storm.

- More than 80 officers, or a quarter of the Corps' total strength, were re-assigned and/or deployed to support the Deepwater Horizon disaster response in the Gulf in 2010.
    - Eight NOAA-owned vessels, or the entire Atlantic fleet, were also deployed to the Gulf of Mexico for spill response, as well as several aircraft.

- Corps officers who run NOAA's Ships support fish stock and marine mammal assessments, marine ecosystem studies, ocean exploration, coral reef preservation and protection, and mapping and charting around the United States and the Arctic, and more.

- Corps officers who run NOAA's Aircraft collect environmental and geographic data essential to studying climate change, assess marine mammal populations, survey coastal erosion, investigate oil spills, and improve hurricane and winter storm forecasts as they pilot the WP-3D Orion hurricane hunters and other aircraft that fly through, and above the storms to obtain critical forecasting data.

Find out more about the Corps, its mission and history at http://www.noaacorps.noaa.gov/.